Amendments to the Claims

1. *(Currently Amended)* Method of position determination in a radio system, the method comprising correlating ~~(Step 1)~~ a signal ~~(R(t))~~ received at a unit ~~(1)~~ with a replica signal at the unit, and processing ~~(Step 2)~~ the correlated signal with an optimisation function comprising an exponential term in combination with a second term.

2. *(Currently Amended)* A method according to Claim 1 wherein the exponential term is in the form $Be^{-\alpha t}$ ~~(Step 2).~~

3. *(Currently Amended)* A method according to ~~Claim 1 or 2~~claim 1 wherein the second term is of the form:

$$\tau_o \sqrt{(1 - \frac{\tau_{o^2}}{t^2})}$$

~~(Step 2).~~

4. *(Currently Amended)* A method according to ~~any preceding claim~~claim 1 comprising effecting an integration ~~(Step 3)~~ with the replica signal.

5. *(Currently Amended)* A method according to ~~any preceding claim~~ claim 1 comprising fitting the optimisation function and a Line-of Sight correlation function ~~(Step 4)~~ with a set of parameters.

6. *(Original)* A method according to Claim 5 comprising superposing the diffuse correlation output with a Line-of-Sight function output and fitting with correlation data of known values for the Line-of-Sight output.

7. *(Currently Amended)* A method according to ~~any preceding claim~~ claim 1 comprising first operating a multipath mitigation technique to effect correlation of the received and replica signals.

8. *(Currently Amended)* A method according to Claim 5 wherein the multipath mitigation technique comprises a Multipath Estimating Delay Locks Loop ~~(MEDLL)~~ technique ~~(Step 1).~~

9. *(Currently Amended)* A method according to Claim 5 wherein the multipath mitigation technique comprises a Minimum Mean Square Error ~~(MMSE)~~ technique.

10. *(Currently Amended)* A computer program product directly loadable into the internal memory of a digital computer, comprising software code portions for performing the method of ~~any one or more of Claims 1 to 9~~claim 1 when said product is run on a computer.

11. .*(Currently Amended)* A computer program directly loadable into the internal memory of a digital computer, comprising software code portions for performing the method of ~~any one or more of Claims 1 to 9~~claim 1 when said program is run on a computer.

12. *(Original)* A carrier, which may comprise electronic signals, for a computer program of Claim 11.

13. .*(Currently Amended)* Apparatus for position determination of a radio system, the apparatus comprising means to correlate ~~(13)~~ a signal ~~(R(t))~~ received at a unit ~~(1)~~ with a replica signal at the unit, and means ~~(13)~~ to process the correlated signal with an optimisation function comprising an exponential term in combination with a second term.

14. *(Original)* Apparatus according to Claim 14 wherein the exponential term is in the form $Be^{-\alpha t}$.

15. .*(Currently Amended)* Apparatus according to ~~Claim 14 or 15~~claim 14 wherein the second term is of the form:

$$\tau_o \sqrt{(1 - \frac{\tau_{o^2}}{t^2})} .$$

16. .*(Currently Amended)* Apparatus method according to ~~any of Claims 14 to 16~~claim 14 comprising means ~~(15)~~ to effect an integration with the replica signal.

17. .*(Currently Amended)* Apparatus according to ~~any of Claims 14 to 17~~claim 14 comprising means ~~(15)~~ to fit the optimisation function and a Line-of Sight correlation function with a set of parameters.

18. .*(Currently Amended)* Apparatus according to Claim 18 comprising means ~~(15)~~ to superpose the diffuse correlation output with a Line-of-Sight function output and fit with correlation data of known values for the Line-of-Sight output.

19. .*(Currently Amended)* Apparatus according to ~~any of Claims 14 to 19~~claim 14 comprising means to first operate a multipath mitigation technique to effect correlation of the received ~~(R(t))~~ and replica signals.

20. .*(Currently Amended)* Apparatus according to Claim 20 wherein the multipath mitigation technique comprises a Multipath Estimating Delay Locks Loop ~~(MEDLL)~~ technique.

21. .*(Currently Amended)* Apparatus according to Claim 20 wherein the multipath mitigation technique comprises a Minimum Mean Square Error ~~(MMSE)~~ technique.